



Formerly DCG/Watershed

## TECHNICAL MEMORANDUM

Date:	May 28, 2025
To:	Matt Mawer, NW Lifestyle Homes
From:	Deb Powers, Senior Arborist
Project Name:	Mercer Island Hackett Tree Protection Plan
Facet Number:	2312.0315.01
Permit Number:	2502-129

# Arborist Report Addendum: Permit Review Response

This memo is in response to the City of Mercer Island permit review comments dated May 16 and 22, 2025 related to the proposed development project at 2965 74<sup>th</sup> Avenue SE in Mercer Island, Washington. The purpose of this memo is to provide City-requested information, assess construction impacts to Tree #1, and summarize recommendations for tree protection, retention, and/or replacement in compliance with applicable Mercer Island City Code (MICC) Chapter 19.10 requirements.

## Background

All subject trees were inventoried and assessed for potential development impacts in the DCG-Watershed (now Facet) arborist report dated March 26, 2024. Because site improvements were unknown at that time, the report outlined site design and tree protection recommendations based on existing tree conditions, best management practices, and Mercer Island City Code (MICC) 19.10, which outlines the code requirements for trees. The following comments are the result of the City’s review of the proposed new single-family residence development submitted under permit number 2502-129. The City tree-related review comments are noted in bold below with corresponding responses.

## City Review Comments & Responses

- 1. Comment: Have you(r) project arborist review plans and tree protection and prepare a memo to confirm health of tree 1 will not be impacted by proposed work (Sheet C-101).**

Response: Upon review, Sheet C-101 shows Tree #1 tree protection fence located against the proposed garage wall, which would likely result in its relocation to allow construction activities, inadvertently impacting Tree #1. Although the garage foundation is shown as slab-on-grade

construction within Tree #1's critical root zone (CRZ),<sup>1</sup> the garage footing drain and downspout connections are likely to necessitate further CRZ encroachment for their installation. An estimated 5-10% root loss occurring here, on the south side of Tree #1's CRZ, would be relatively minor. However, significant trenching for underground utilities shown north of Tree #1, inside the tree protection fencing, may result in approximately 15-20% additional root loss, which is typically not tolerated well by this species in its current condition, based on best practices and published guidelines<sup>2</sup> as noted in the original arborist report. Recommendations follow on how to mitigate impacts to Tree #1.

**2. Comment: Label how far from southern property line the tree protection fencing is. It should be at least 19 feet per the arborist report (Sheet C-101).**

Response: Upon review of Sheet C-101, the east half of the proposed tree protection fence that parallels the south property line appears to be located about 19 feet north of the property line, adequately protecting Tree #4. Note that the original arborist report was developed when there were no known improvements, so the recommended fence distance and configuration collectively protected four trees - two on-site (Trees #3-4) and two on adjacent property (Trees A-B) - in an area that was assumed to be outside the limits of disturbance for the duration of the project. Sheet C-101 and others in the plan set show a proposed infiltration drywell in the rear yard setback, off an outdoor living area. Consequently, the southernmost proposed tree protection fence on the western half does not parallel the property line. There, the proposed tree protection fence is shown at the boundary of Tree #3 and Tree A CRZs, providing adequate protection from construction impacts. The proposed fence location is shown within Tree B's CRZ to accommodate drywell construction activities. Although off-site Tree B is a Douglas fir in good condition, it is likely to withstand minimal impacts from the drywell installation. See the fence location adjustment recommendations below.

**3. Comment: This jog in the tree protection fencing is not consistent with recommendations outlined in the arborist report. Please revise or have your arborist review and update recommendations (Sheet C-101).**

Response: Upon review of Sheet C-101, the jog in the tree protection fencing is shown on the west side of the southernmost tree protection fence discussed above, adjacent to Trees #3, 4, and offsite Trees A and B. See the above response and updated recommendations for tree protection fence placement below.

**4. Comment: Suggestion to update the tree protection fence standard.**

Response: Use the current fence standard provided in Figure 1.

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<sup>1</sup> Critical root zone - area of soil around a tree where the minimum amount of roots considered critical to the structural stability or health of the tree are located. CRZ determination is sometimes based on dripline or DBH, but because root growth is often asymmetric due to site conditions, on-site investigation is preferred.

<sup>2</sup> Matheny, N. and Clark, J. 1998. Trees and Development: A Technical Guide to Preservation of Trees During Land Development. Atlanta, GA: International Society of Arboriculture.

## RECOMMENDATIONS

The recommendations below reflect a collaboration with the applicant in response to City review comments to consider design revisions that meet Mercer Island's tree code requirements. The applicant has begun the development of a revised Sheet A0.2 to reflect the following changes:

- 1. Shift garage location.** Shift the garage footprint south to provide adequate space for its construction while also implementing tree protection measures to retain Tree #1.
- 2. Adjust Tree #1 tree protection fence location.** Install tree protection fencing at Tree #1's CRZ boundary (18 feet radius from face of trunk), with the exception of allowing a linear fence configuration parallel to the north garage wall, at mid-wall.
- 3. Adjust west side/southernmost tree protection fence location.** Show fence placement at or outside offsite Trees A and B and Tree #3 CRZs to ensure adequate tree protection for the duration of the project. Note that Trees #3, 4, A and B, as healthy trees with no major structural defects, are more tolerant of root injury/loss, changes in soil grade, moisture, and compaction and can better adapt to new post-construction site conditions than unhealthy trees with severe/multiple defects.
- 4. Show tree protection construction notes on plans.** Add special instructions outlining recommendations for additional tree protection measures applicable to Tree #1.

## Tree Protection Construction Notes

The following recommendations are provided to transfer to site plans as construction notes with the intent of minimizing damage to tree roots, trunks, and other tree parts and to stay within the acceptable thresholds for root loss, presented in order of construction sequencing as follows:

### TREE PROTECTION FENCE

Install tree protection fence at recommended locations prior to the commencement of construction that shall remain in place for the duration of the project. All construction activities shall be conducted outside of the fenced areas. If construction sequencing changes, additional tree protection fencing may be required to prevent tree damage. Fencing shall meet City of Mercer Island standards (Figure 1).

### AIR EXCAVATIONS

Because the garage slab, footing drain, and utility excavations within Tree #1 CRZ cannot be avoided, efforts need to be made to identify tree root locations and utilize proper root pruning methods to reduce inadvertent root loss, preserve the structural integrity of trees, and regenerate new roots. The following notes intend to clarify the construction sequence and special instructions for exposing roots using high-pressure air (pneumatic) tools.

- Tree #1/south roots. Conduct air spade excavations at the tree protection fence line adjacent to the proposed garage north wall to properly prune roots extending towards the garage.

- Air excavations should continue to at least 12 inches below the soil surface to assess roots on the south side of Tree #1, adjacent to the garage.
- Keep equipment and excavated spoils outside of the designated CRZ. Protect adjacent areas from rock-throw with plywood panels and keep soil moist to minimize dust.
- Backfill should be replaced the same day it was excavated to reduce root desiccation. Backfill may consist of native or amended soil. During cooler, wet weather, cover exposed roots with wet burlap immediately; burlap should be kept moist until backfilled. Chemicals, debris, trash, or other materials should not be mixed with backfill. Backfilled soil should match and not exceed the compaction of the surrounding soil.
- Water the tree's CRZ. Mulch with arborist woodchips at 4-6-inch depths, taking care to avoid mulch directly contacting the trunk.

## ROOT PRUNING

Specific root location is uncertain until exposed. Facet recommends careful and intentional root pruning at the south boundary of Tree #1's tree protection fence to minimize root damage closer to the tree, which typically results from heavy equipment excavations or trenching without root pruning.

- No more than 20% root loss resulting from proper pruning cuts shall occur.
- Any exposed roots over one inch should be clean-cut by hand (versus removal with soil by excavator bucket).
- All root pruning should be overseen by the project arborist. Facet can provide names/contact information for experienced air excavator/root pruning contractors upon request.

## TUNNEL/BORE INSTEAD OF TRENCHING

If no alternative path for underground utilities is possible outside Tree #1 CRZ, tunnel or hydrobore (versus traditional trenching methods that sever roots) underneath roots to the minimum depth required by the utility to reduce Tree #1 root loss. Relocate or install below-grade utilities by:

- Temporarily allowing access within tree protection fence.
- Exposing roots via air spade excavations, hydro-bore, vactor or other non-injurious methods.
- Installing or relocating conduit, backfill and replace tree protection fence in its approved location.

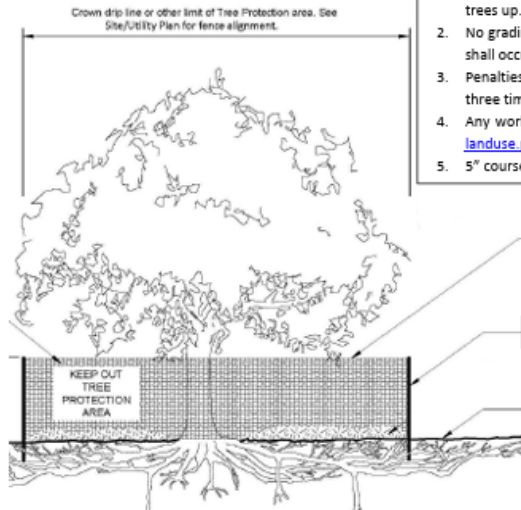
# TREE PROTECTION AREA (TPZ)

## KEEP OUT!

### DO NOT REMOVE OR ADJUST THE APPROVED LOCATION OF THIS TREE PROTECTION AREA

Trees enclosed by this fence are protected and are subject to the conditions of the tree permit. Violation of tree conditions may lead to:

1. Correction Notices or Stop Work Orders until compliance is achieved
2. RE Inspection Fees/financial penalties
3. Arborist reports recommending mitigation



#### Notes

1. No pruning shall be performed unless under the direction of the Project Arborist. Including limbing trees up.
2. No grading, excavation, storage (materials, equipment, vehicles, etc.), or other unpermitted activity shall occur inside the protective fencing.
3. Penalties for damaging by root damage/compaction or removing a saved tree may be a fine up to three times the value of the tree plus restoration (MICC 19.10.160).
4. Any work in approved TPZ must be with the permission of the Land Use and Planning Division at [landuse\\_planning@mercergov.org](mailto:landuse_planning@mercergov.org)
5. 5" course woodchips within the tree protection zone, but not against the tree trunk.

Tree protection fence: 4-6" chain link fence, solidly anchored into the ground, or if authorized High-density polyethylene fencing with 3.5" x 1.5" openings; color orange. Steel posts installed at 8' o.c.

2" x 6" steel posts or approved equal

Maintain existing grade with the tree protection fence unless otherwise indication on the plans

Any Work in the protected area must be with the permission of the Land Use and Planning Division at [landuse\\_planning@mercergov.org](mailto:landuse_planning@mercergov.org)

Figure 1. City of Mercer Island Tree Protection Zone (TPZ) standard accessed from: [https://www.mercerisland.gov/sites/default/files/fileattachments/community\\_planning\\_amp\\_development/page/2091/tree\\_protection\\_area\\_signage\\_chain\\_link\\_update.pdf](https://www.mercerisland.gov/sites/default/files/fileattachments/community_planning_amp_development/page/2091/tree_protection_area_signage_chain_link_update.pdf).